

REVIEW

on the materials for participation in a competition for the academic position of "Professor", field of higher education 6. Agricultural sciences and veterinary medicine, Professional field 6.1. Crop science, scientific specialty "Soil Science", in the discipline "Soil Science", announced by the University of Forestry in State Gazette No. 60/16.07.2024, procedure code: FOR-P-0624-144.

Candidates for participation in the competition are:

1. Assoc. Prof. PhD Biser Emilov Hristov

Reviewer: Assoc. Prof. PhD Boyka Zdravkova Malcheva, Professional field 4.4. Earth sciences, scientific specialty "Ecology and protection of ecosystems", from University of Forestry, Sofia City, appointed a member of juri to the order No. ZPS 503 / 12.09.2024 of the President of University of Forestry

1. Brief biographical data about the candidate

Assoc. Prof. PhD Biser Emilov Hristov was born on 22.01.1977 in the city of Sofia. He completed his secondary education at 22 "Georgi S. Rakovski" Secondary School in the city of Sofia in 1995. In the period 1995 - 2000 he was a student at the University of Forestry (UF), Master's degree, specialty "Ecology and conservation of the natural environment". In the period 2006 - 2009, he was a full-time PhD student at Nikola Poushkarov Institute of Soil Science, Agrothechnology and Plant Protection, Sofia, received the degree of Education and Science "Doctor" in 2009. He defended his doctoral dissertation on the topic: "Pedometric nature and taxonomic affiliation of the Primitive soils formed on soft rocks from the Black Earth zone of Northern Bulgaria". From 2010 to 2017, he was successively an assistant and chief assistant at IPAZR "N. Pushkarov", Sofia. From 2018 until now, he is an associate professor at Nikola Poushkarov Institute of Soil Science, Agrothechnology and Plant Protection (second employment contract), and from 2020 to now associate professor at UF, Sofia (main employment contract).

The main activities and field of work of the candidate Assoc. Prof. PhD Biser Emilov Hristov are related to his positions as a teacher and researcher in Soil Science, Erosion and Soil Conservation, Soil Monitoring at UF and Nikola Poushkarov Institute of Soil Science, Agrothechnology and Plant Protection, Sofia.

It is clear from the presented professional resume that Assoc. Prof. PhD Biser Hristov increased his professional qualifications, skills and competencies as an author of scientific publications, participated in international and national conferences, was a member of the scientific and organizational committee of conferences, head and member of the working group of scientific projects, editor-in-chief and editor in scientific journals, coordinator of relations between IUSS, ECSSS and the Bulgarian Soil Science Society, chairman of the Bulgarian Soil Science Society and of the Federation of University Trade Unions (UF), chairman of the trade union organization at Nikola Poushkarov Institute of Soil Science, Agrothechnology and Plant Protection – Confederation of "Podkrepa", for the period 2017-2019, member of the Bulgarian Society for Humic Substances and of the Scientific council for general agriculture, soil science, agrochemistry and amelioration at the Agricultural Academy, Sofia, scientific supervisor of graduate students and doctoral student, has good computer literacy (MS Office, ArcGIS, AutodeskMap, HTML, WordPress, Photoshop, SPSS, Adobe Acrobat, etc.; Publication and distribution of scientific and popular science articles; creation

and maintenance of soil science websites: www.bsss.bg; <https://soilmotree.com>; <http://norwaysprucebg.eu/>; <http://ourgoodcompost.eu/>. He speaks English and Russian at a very good level. He participated in trainings in Italy - on COST, in connection with topics related to the restoration of soil resources and the fight against desertification, and in a soil physics college.

Since 2020, he has been in the scientific staff of the Department of Soil Science and, after the merger of departments, in the Department „Silviculture“, Faculty of Forestry at UF. He teaches the disciplines "Soil Science", "Soil Erosion and Conservation", "Soil Science, Soil Pollution and Impact on Ecosystems", "Abiotic Monitoring of Soils" and "Soil Resources in Settlement Systems".

2. Conformity of the submitted documents and materials of the candidate with the required ones according to the Regulations for Development of the academic staff in the University of Forestry

The candidate Assoc. Prof. PhD Biser Hristov has presented a list of titles of his scientific production - a total of 96 scientific products, including: abstract and publications for the acquisition of the degree of Education and Science "Doctor" (7 pcs), publications for the acquisition of the academic position of "Associate Professor" (30 pcs), articles and works additionally added to National Center for Information and Documentation to cover the minimum scientometric indicators for the academic position of "Associate Professor" (24 pcs), popular science articles (3 pcs), scientific works after acquisition of the academic position of "Associate Professor" and inclusion in National Center for Information and Documentation, presented as publications in a reference-self-assessment under the current competition for the academic position "Professor" (32 pcs). The submitted documents comply with the requirements of the Regulations for Development of the academic staff in the University of Forestry. The scientific production of the candidate complies with the minimum national requirements of the Law for Development of the academic staff in Republic of Bulgaria and the Regulations for Development of the academic staff in the University of Forestry for occupying the academic position of "professor". The candidate covers and exceeds the minimum required points by groups of indicators, for Professional field 6.1. Crop science, academic position "professor". According to the minimum required points for Professional field 6.1. Crop science, the reference and assessment of compliance by indicators is as follows:

Indicator A1 – Dissertation work for awarding the educational and scientific degree "doctor". A copy of the diploma for the educational and scientific degree "Doctor" is presented. The required 50 points have been met.

Indicator B4 - Habilitation work - scientific publications in publications that are referenced and indexed in world-famous databases of scientific information. The candidate has presented 10 publications, 187 points. The candidate exceeds the required points for indicator B4.

Indicator G6 – Published monograph based on dissertation. The candidate submits a monograph with a volume of 104 pages - 40 points according to indicator G6_1.

Indicator G7 – Articles and reports published in scientific publications, referenced and indexed in world-famous databases with scientific information. The candidate has presented 13 publications.

Indicator G8 - Articles and reports published in non-refereed peer-reviewed journals or published in edited collective volumes. The candidate has presented 8 publications.

Total for G6+G7+G8 required 200 points – 293,8 points are fulfilled.

Summaries of the scientific production are presented.

Indicator D - D12 - Citations or reviews in scientific publications, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes - 46 citations, 690 points with a minimum of 100 points - the points exceed approximately 7 times the required.

Indicator E1 - Guide to a national scientific or educational project - 1 pc.

Indicator E2 - Participation in a national scientific or educational project - 12 pcs.

Indicator E4 - Participation in an international scientific or educational project - 1 pc.

Indicator E5 - Published university textbook or textbook that is used in the school network - 1 pc. The candidate has a self-published textbook entitled "Erosion and Soil Conservation".

Of the required 100 items under indicator "E", 260 items have been completed.

Total number of points for all indicators: 1480.8 points, distributed as indicated in the following table 1.

Table 1. Total number of points of the candidate by group of indicators

Indicators	Number of points of the candidate
A	50
B	187
Г	293,8
Д	690
E	260
Total:	1480,8

According to the total number of points from all groups of indicators, the candidate exceeds about 3 times the minimum total number of points from all indicators - 550 points.

A list of publications and citations is presented, accompanied by copies of scientific publications and the textbook.

The following documents are attached:

1. Curriculum vitae (CV)
2. Notarized copy of the diploma for the educational and scientific degree "Doctor"
3. Notarized copy of Master's degree"
4. Document for occupied academic position
5. Medical certificate
6. Criminal record certificate
7. Certificate of internship in the specialty
8. Reference-self-assessment for the fulfillment of the minimum national requirements for the academic position "professor"
9. Reference to the contributions in the candidate's works, which do not repeat the works from the last competition for occupying an academic position and from the last protected dissertation work
10. List of publications, inventions, citations and other applied scientific results
11. Documents and written materials certifying other professional and creative activities and appearances
12. Sample information card in Bulgarian and English
13. Habilitation certificate
14. Summaries
15. Publications

3. Evaluation of the teaching activity of the candidate

Assoc. Prof. PhD Biser Hristov conducts auditory and out-of-auditory classes for students from the Bachelor's and Master's degrees at UF, Sofia, in the disciplines: "Soil

Science" (Bachelor's degree, specialties: "Agronomy" and "Plant Protection" - full-time form of education), "Soil Erosion and Conservation" (Bachelor's degree, specialty: "Agronomy" - full-time and part-time form of education), "Soil Science, Soil Pollution and Impact on Ecosystems" (Bachelor's degree, specialty "Ecology and protection of ecosystems"), "Abiotic monitoring of soils" (Master's degree - "Environmental restoration and ecological monitoring" - full-time form of education) and "Soil resources in settlement systems" (Master's degree – „Urban Ecology“ - full-time form of education). Conducts practices with students in the disciplines "Soil Science" and "Soil Erosion and Conservation".

He participates in updating the curricula he teaches. Scientific supervisor of 4 students from the "Forestry" specialty, two successfully defended, two active graduate students and one active PhD student.

4. Evaluation of the scientific, scientific-applied and publishing activity of the candidate

4.1. Participation in scientific, scientific-applied and educational projects

Assoc. Prof. PhD Biser Hristov is the head of an ongoing national project at the Scientific Research Fund: Project No. KP-06-H56/7 Study of interrelationships in the system "soil - soil microorganisms - wood composition" in forest plantations on the territory of the "Vitosha" Nature Park. He is a member of the scientific team of 12 national scientific projects and 1 international scientific project.

The relevant documents have been submitted for participation in the projects. The projects are included in National Center for Information and Documentation.

4.2. Characteristics of the published scientific results

In the reference-self-assessment for compliance of the scientific production with the minimum national requirements, Assoc. Prof. PhD Biser Hristov presents: 1 pc. dissertation work for the award of the degree of Education and Science "Doctor", 1 pc. monograph based on the dissertation work, 31 scientific publications, of which 23 are in refereed and indexed journals in world-famous databases with scientific information (Web of Science – WoS – 13 – 1 pc. with impact factor, Scopus – 10 pcs. with SJR) and 8 pcs. in non-refereed peer-reviewed journals or edited collective volumes. A monograph based on a dissertation with the title: "Regozems in Bulgaria" is presented. The monographic work was developed on the basis of a dissertation defended in 2009 for the award of the degree of Education and Science "Doctor" with the title: "Pedometric nature and taxonomic affiliation of the primitive soils formed on soft rocks of the Black Earth zone of Northern Bulgaria" (G6_1). The book focuses on poorly developed Regozem soils (Regosols), their distribution, diagnostics, properties, use and problems. There are 7 conference reports - 2. national and 5 pcs. international. There are 7 independent scientific papers (22%) (G6_1, G7_1, G7_4, G7_7, G7_9, G8_2, G8_4). First author is in 8 publications - 26% of publications (B4_2, B4_4, B4_6, B4_8, B4_10, G7_3, G7_13, G8_5), second author is in 8 publications - 26% of publications (B4_1, B4_3, B4_9, G7_2, G7_5, G7_8, G7_11, G8_6), in the remaining 9 pcs. publications (29%) is in third and following place. 74% of the publications are in refereed and indexed journals in world-famous databases with scientific information (WoS, Scopus). In non-refereed journals with peer-reviewed or edited collective volumes are 26% of the publications (Fig. 1). 25 volumes were published in English, and 7 volumes in Bulgarian. from the scientific works presented in the reference-self-assessment.

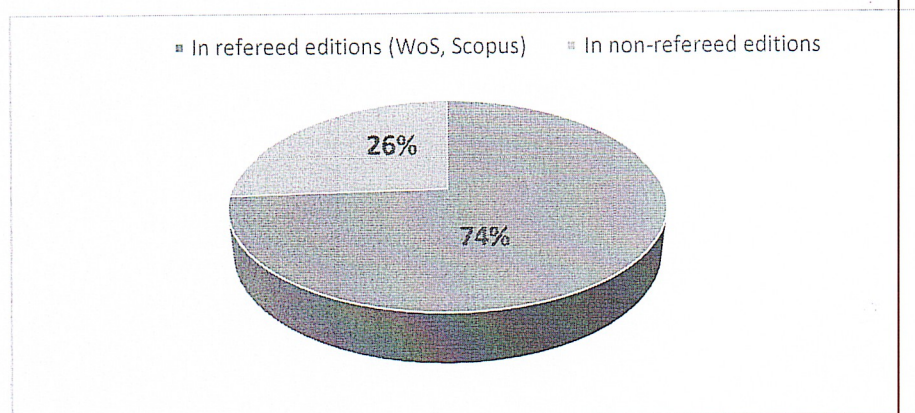


Fig. 1. Percentage distribution of publications in refereed and non-refereed editions

The candidate presents 1 pc. textbook (E5_1) on "Soil Erosion and Conservation", which examines theoretical and practical issues regarding the development of soil erosion, as well as the existing practices and methods of soil conservation from degradation, the types of erosion and erosion factors are characterized.

In the period 2018-2024, Assoc. Prof. PhD Biser Hristov participated in the following international scientific forums with published works:

Participation in International Forums and Conferences 2018 – 2024

1. The 19th International Conference "Humic Substances and their contribution to the climate change mitigation Albena Resort, Varna Region, Bulgaria September 16-21, 2018
2. 1st International Electronic Conference on Agronomy, 3–17 May 2021, MDPI: Basel, Switzerland, doi:10.3390/IECAG2021-10022
3. International Conference "Forestry: Bridge to the future" 05–08 May 2021 in Sofia, Bulgaria
4. Global Symposium on Salt-affected Soils-21 October-online-FAO. Rome
5. Global symposium on soils for nutrition, FAO Rome (online) 26 - 29 July 2022.
6. XXII International Multidisciplinary Scientific GeoConference Surveying, Geology and Mining, Ecology and Management – SGEM Albena 2022 2 - 11 July, 2022
7. The 2024 9th International Conference on Energy Efficiency & Agricultural Engineering - 27.06.2024 - 29.06.2024 Ruse, Bulgaria.

Participation in National Forums and Conferences

1. Scientific Forum "Ecology and Agrotechnologies - Fundamental Science and Practical Implementation, October 10, 2019, Sofia
2. Scientific Forum "Ecology and Agrotechnologies - Fundamental Science and Practical Implementation" December 5 - 6, 2022, Sofia
3. Scientific Forum "Ecology And Agrotechnologies - Fundamental Science And Practical Implementation", held on December 5, 2023

The main directions of the scientific works of Assoc. Prof. PhD Biser Hristov, presented for participation in the competition are indicated in point 4.4. Contributions in the works of candidates.

4.3. Reflection of the candidate's scientific activity in the literature (citation)

Assoc. Prof. PhD Biser Hristov presents a total of 46 citations in "Reference-self-assessment", to indicator D - citations in scientific publications, referenced and indexed in

world-famous databases with scientific information or in monographs and collective volumes. It repeatedly exceeds the required points - 690 points with a minimum of 100 points, which confirms the importance of the cited publications.

4.4. Contributions in the works of candidates (scientific, scientific-applied, applied)

The candidate presents 6 scientific contributions, 6 scientific-applied contributions and 8 contributions from the habilitation report. In general, I accept the scientific and scientific-applied contributions of the candidate presented in the "Reference to the contributions in the papers", with a small technical correction in a second scientific contribution:

Scientific contributions

1. The diagnostics and characteristics of the Regozems in Bulgaria have been updated, new classifiers have been given and the soil properties of Saturated and Carbonate Regozems have been summarized. Land evolution of the Regozems was made. (G6_1)
2. The basic properties of Luvisols, Vertisols and the physicochemical properties of Phaeozems were studied. They were found to have high sorption capacity and high base saturation. New data on their distribution, properties and composition have been obtained. (G7_1; G7_4; G7_7)
3. The properties and fertility of the Botevgrad valley have been determined - the results show relatively varying values. Geostatistical interpolation of soil properties was done using distance back weighted maps (IDW maps). The risk of water erosion has been identified. A basic credit characterization of the area and the possibility of growing main crops was made. (G7_3; G7_8; G7_12; G7_13)
4. Correlations between the physical, chemical and microbiological indicators of Luvisols have been established. The possibility of applying the microbiological analyzes as a very sensitive indicator of the upcoming changes in the soil, which occurred as a result of the degradation processes (water erosion and loss of organic matter) and the way of land use, is indicated and proven. (G7_5; G7_4)
5. The distribution in depth of the mobile forms of the heavy metals Cu, Zn, Cd, and Pb and their interrelationships with basic chemical characteristics of contaminated soils were investigated. (G7_2)
6. The influence of an imported microbiological additive on the microbial count of compost mixtures was studied. The specific parameters related to the composting process and the specific activity of microorganisms are reported. (G8_7)

Scientific and applied contributions

1. Nine soil indicators were determined to characterize the objective biophysical criteria: insufficient drainage, unfavorable texture and stony, shallow root layer and unsatisfactory chemical properties. Areas with natural limitations in Bulgaria have been identified according to the criteria for unfavorable mechanical composition and it is necessary for the harmonization of data in connection with the application of a European regulation on supporting the development of rural areas. (G7_6)
2. It has been established how soils can be affected by salinization in different ways. Strategies for counteracting salinization-affected soils are divided into preventive, mitigating and adaptive. Possibilities are suggested to identify strategies to deal with saline soils in Europe, according to the types of production systems and the level of exposure to salt

He successfully supervises graduate students and a doctoral student. Chairman of the Bulgarian Soil Science Society and Federation of University Trade Unions (UF). Chief editor of the Bulgarian Journal of Soil Science and member of the editorial board of the Journal of Balkan Ecology.

8. Conclusion

In terms of volume, content and quality, the presented scientific production and the active research, applied and organizational activity, professional and scientific experience of the candidate fully correspond to the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for Development of the academic staff in the University of Forestry. The candidate Assoc. Prof. PhD Biser Hristov **covers and significantly exceeds** the minimum national requirements for the academic position of "Professor". **I confidently give my positive assessment and I RECOMMEND the candidate Assoc. Prof. PhD BISER EMILOV HRISTOV to take the academic position of "Professor" in the discipline "Soil Science" from Professional field 6.1. Crop Science.**

Reviewer's signature:

(Assoc. Prof. PhD Boyka Malcheva)

Review submitted on: 7/11/2024